CLAIMS

1. An image processing apparatus comprising:

image input means for getting a plurality of image parts dividing one composition such that the image parts have overlapping areas, each having the same image of an object in the overlapping area as in the overlapping area of the next image part;

correction parameter setting means for setting a correction parameters necessary to correct at least distortion of said plurality of image parts generated in each overlap area or a difference between the image parts;

image correcting means for correcting at least one image part of said plurality of image parts in accordance with said set correction parameter to eliminate at least distortion of said plurality of image parts generated in each overlap area or the difference between the image parts;

image joining means for sequentially joining the plurality of image parts corrected by said image correction means in said overlap area to restore said one composition; and

image display means for display at least said plurality of image parts input by said image input means or said image parts corrected by said image ~~correction means.~~

2. An image processing apparatus comprising:

image input means for inputting one composition as a plurality of images taken with a different exposure;

correction parameter setting means for setting correction parameters necessary to correct brightness of at least one image of said plurality of images having a different exposure;

brightness correcting means for correcting brightness of at least one image of said plurality of images in accordance with said set correction parameters;

image display means for displaying at least one image of the images corrected by said brightness correction means; and

image synthesizing means for estimating an amount of incident light obtained when said one input image is input based on said plurality of input images and said set correction parameters to convert said plurality of images whose brightness is corrected by said brightness correction means to be placed in a displaying range of said image display means, thereby joining said plurality of images.

3. The image processing apparatus according to claim 1 or 2, wherein said image correction means corrects the image by changing the correction parameter in accordance with differences in brightness between a plurality of images displayed by said image display means.

4. The image processing apparatus according to claim 1 or 2, wherein said image correction means corrects the image by changing the correction parameter in accordance with the distortion of one image displayed by said image display means or in accordance with differences in distortion between a plurality of images displayed by said image display means.

5. The image processing apparatus according to claim 1 or 2, wherein said image correcting means corrects the image by changing the correction parameter in accordance with differences in image magnification between a plurality of images displayed by said image display means.

6. The image processing apparatus according to claim 1 or 2, wherein said image correcting means corrects the image by changing the correction parameter in accordance with differences in color data between a plurality of images displayed by said image display means.

7. The image processing apparatus according to claim 6, wherein said color data is at least one of hue, saturation, and intensity.

8. The image processing apparatus according to claim 6, wherein said color data is at least one of R, G and B values for adjusting a white balance.

9. The image processing apparatus according to claim 1 or 2, wherein said image correction means

corrects the image by changing the correction parameter in accordance with peripheral reduction light of one image display by said image display means or in accordance with differences in peripheral reduction light between a plurality of images displayed by said image display means.

10. The image processing apparatus according to claim 3, wherein said image correction means corrects the image by changing an exposure ratio between a plurality of images, which is used as said correction parameter, in accordance with difference in brightness between said plurality of images displayed by said image display means.

11. The image processing apparatus according to claim 4, wherein further comprising correction parameter storing means for storing one or a plurality sets of said correction parameters used in correcting said image in connection with the name of the imaging apparatus used to take the image, and said correction parameter setting means selects a desired set of correction parameters from the correction parameters stored in said correction parameter storing means.

12. The image processing apparatus according to claim 9, wherein further comprising correction parameter storing means for storing one or a plurality sets of said correction parameters used in correcting said image in connection with the name of the imaging

apparatus used to take the image, and said correction parameter setting means selects a desired set of correction parameters from the correction parameters stored in said correction parameter storing means.

Sub C4

13. An image processing method comprising:

an image input step of getting a plurality of image parts dividing one composition such that the image parts have overlapping areas, each having the same image of an object in the overlapping area as in the overlapping area of the next image part;

a correction parameter setting step of setting correction parameters necessary to for correct at least images distortion or image difference occurring in the overlapping areas of each image part;

an image correcting step of correcting at least one of said plurality of image parts in accordance with said correction parameters, thereby to correct distortion of images or image difference occurring in at least the overlapping areas of each image part;

a composition restoring step of restoring said composition by sequentially combining said plurality of image parts corrected, one to another, with overlapping the same at overlapping areas; and

an image displaying step of display at least said plurality of image parts input or said plurality of ~~image parts corrected.~~

Sub C5

14. An image processing method comprising:

an image input step of inputting a plurality of images obtained by taking one composition at different exposures;

a correction parameter setting step of setting a correction parameters indispensable for correcting the brightness of at least one of said plurality of images taken with different exposures;

an image correcting step of correcting the brightness of said at least one image in accordance with the correction parameter set;

an image displaying step of displaying at least one of images corrected in the image correcting step; and

an image synthesizing step of combining said plurality of images corrected in brightness in the image correcting step, into one image to be displayed within a range of the imaging display step, by inferring an amount of incident light obtained when said composition is input in the image input step, from said plurality of images which have been input and said correction parameter which has been set.

15. The image processing method according to claim 13 or 14, which further comprises a correction parameter storing step of storing one or a plurality sets of the correction parameters used in correcting the image, in connection with the name of the photographing apparatus and the name of the

photographing method used to photograph the image, and in which said correction parameter setting step is to select and set a desired set of correction parameters from correction parameters stored in said correction parameter storing step.

16. The image processing method according to claim 13 or 14, which further comprises a correction parameter storing step of storing one or a plurality sets of the correction parameters used in correcting the image, in connection with the name of the photographing apparatus and the name of the photographing method used to photograph the image, and in which said correction parameter setting step is to select and set a desired set of correction parameters from correction parameters stored in said correction parameter storing step.

17. The image processing method according to claim 13 or 14, wherein said image correcting step is to change the correction parameter in accordance with differences in image magnification between a plurality of images displayed in said image displaying step.

18. The image processing method according to claim 13 or 14, wherein said image correcting step is to correct the image by changing the correction parameter in accordance with differences in color data between a plurality of images displayed by said image display means.

19. The image processing method according to claim 13 or 14, wherein said image correcting step is to is to correct the image by changing the correction parameters in accordance with peripheral reduction light of one image displayed in said image displaying step or in accordance with differences in peripheral reduction light between a plurality of images displayed in said image displaying step.

Sub C5 20. The image processing method according to claim 13 or 14, wherein said image correcting step is to correct the image by changing an exposure ratio between a plurality of images, which is used as said correction parameter, in accordance with differences in brightness between said plurality of images displayed in said image displaying step.

Sub C5 21. A recording medium recording computer programs for restoring an image by combining a plurality of image parts divided from one composition, each image parts having the same image of an object in an overlapping area, said recording medium recording:

an image inputting program for inputting said plurality of image parts;

a correction parameter setting program for setting correction parameters indispensable for correcting images distortion or image difference occurring in at least the overlapping areas of each image part;

an image correcting program for correcting

at least one of said plurality of image parts in accordance with said correction parameters, thereby to correct distortion of images or image difference occurring in at least the overlapping areas of each image part;

a composition restoring program for restoring said composition by sequentially combining said plurality of image parts corrected, one to another, with overlapping the same at overlapping areas; and

an image displaying program for displaying said plurality of image parts input, or at least one of said plurality of image parts corrected.

Sub B3

22. A recording medium recording computer programs for correcting a plurality of images obtained by taking one composition with different exposures, to provide an image having a desired brightness, said recording medium comprising:

an image inputting program for inputting one composition in the form of a plurality of images photographed at different exposures;

a correction parameter setting program for setting a correction parameters indispensable for correcting the brightness of at least one of said plurality taken with images photographed at different exposures;

an image correcting program for correcting the brightness of said at least one image in accordance with the correction parameter set;

an image displaying program for displaying at least one of images corrected in accordance with the image correcting program; and

an image synthesizing program for combining said plurality of images corrected in brightness in accordance with said image correcting program, into one image to be displayed within a range of accordance with said imaging display program, by inferring an amount of incident light obtained when said composition is input in accordance with said image inputting program, from said plurality of images which have been input and said correction parameter which has been set.

23. The recording medium according to claim 21 or 22, which further comprises a correction parameter storing program for storing the correction parameter used in correcting the image, in connection with the name of the photographing apparatus and the name of the photographing method used to photograph the image, and in which said correction parameter setting program is designed to select and set a desired correction parameter from correction parameters stored in accordance with said correction parameter storing program.

24. The recording medium according to claim 21 or 22, which further comprises a correction parameter storing program for storing the correction parameter used in correcting the image, in connection with the

name of the photographing apparatus and the name of the photographing method used to photograph the image, and in which said correction parameter setting program is designed to select and set a desired correction parameter from correction parameters stored in accordance with said correction parameter storing program.

25. The recording medium according to claim 21 or 22, wherein said image correcting program is designed to correct the image by changing the correction parameter in accordance with differences in image magnification between a plurality of images displayed in accordance with said image displaying program.

26. The recording medium according to claim 21 or 22, wherein said image correcting program is designed to correct the image by changing the correction parameter in accordance with differences in color data between a plurality of images displayed in accordance with said image display program.

27. The recording medium according to claim 21 or 22, wherein said image correcting program is designed to correct the image by changing the correction parameter in accordance with peripheral reduction light of one image displayed by using said image displaying program, or in accordance with differences in peripheral reduction light between a

plurality of images displayed in said image displaying step.

Sub F6

28. The recording medium according to claim 21 or 22, wherein said image correcting program is designed to correct the image by changing an exposure ratio between a plurality of images, which is used as said correction parameter, in accordance with differences in brightness between said plurality of images displayed by using said image displaying program.

Sub B7